



Summary

Contents

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Contents

Measures of Australia's Progress

Analyses of the National Health Surveys

Labour Force Seasonal Adjustment after Regional Benchmarking and Change to Future Starters

2004/5 Indigenous Health Survey Sample Design

Analysing the Western Australia Aboriginal Child Health Survey

Making Quality Visible using the Quality Infrastructure System

Measures of Australia's Progress

MEASURES OF AUSTRALIA'S PROGRESS

The second issue of **Measures of Australia's Progress** (MAP) was released on 21 April. It is an ABS contribution to the national discussion about whether life in Australia is getting better.

In 2002, the ABS released the first issue of Measures of Australia's Progress (MAP). More than two years in the making, the first issue was referred to in the media as 'about as close as any statistician can get to the meaning of life'. And late last year Dennis Trewin topped the society category of The Bulletin's Smart 100 awards for the ground breaking work in producing the publication.

MAP presents 15 headline dimensions of Australian progress that cover many of the areas of life most important to Australia and Australians. The publication draws on ABS and other data to paint a picture of national progress over the past ten years, and updates and expands upon the first issue of MAP.

MAP covers: **Health, Education, Work, National Income, Financial Hardship, National Wealth, Housing, Productivity, The Natural Landscape, The Human Environment (air quality), Oceans and Estuaries, International Environmental Concerns (Greenhouse), Family, Community and Social cohesion, Crime, Democracy, Governance and Citizenship.**

Headline indicators that summarise progress in each area are included for most dimensions: health, for example, uses life expectancy at birth; national income uses real net national disposable income per capita. Commentary that accompanies the indicators discusses trends in progress together with differences within Australia and the factors influencing change. The aspects of national progress are linked with one another. Changes in one aspect will be associated with changes in many others — sometimes for the better and sometimes for the worse.

Overall progress is not assessed by simply counting the numbers of areas getting better and subtracting those getting worse. Some aspects of progress (especially aspects such as national income and national wealth) are more easily encapsulated in a small number of indicators, than are some social and environmental aspects of progress. And some readers of MAP will give greater importance to some aspects of progress than to others.

Supplementary commentaries provide more information about the headline indicators. They discuss other aspects of national progress including Culture and Leisure, Inflation, Competitiveness and Openness, Transport and Communication.

For further information please contact Jon Hall on 02 6252 7221, or Email: jon.hall@abs.gov.au

Analyses of the National Health Surveys

ANALYSES OF THE NATIONAL HEALTH SURVEYS

A team from the Analytical Services Branch recently completed an analysis of the ABS National Health Surveys to find evidence on the association between health status and labour force status. Specifically, this involved pooling unit record data from the last three national health surveys and examining the relationship between long-term health conditions/health risk factors, and non-participation in the labour force. The analysis was conducted in collaboration with the Department of Health and Ageing (DoHA) and the Health Section.

The analysis adds to the wealth of information about the health-labour force nexus by incorporating **age, period and cohort** effects into the analysis, and by considering the effects of specific health conditions, risk factors and other socio-economic demographic factors not present in other studies. It makes use of pooled unit record data from the 1989, 1995 and 2001 NHSs. The pooling of data was done to account for age, period and cohort effects, and to give the study a richer sample from which the association can be examined.

A multiple logistic regression framework was used. This type of model estimates the odds (or probability) of non-participation in the labour force given a set of health status indicators (e.g. hypertension, asthma, arthritis, diabetes, cancers and anxiety; and risk factors like smoking, obesity, lack of exercise), socio-economic-demographic variables while controlling for age, period and cohort effects.

For further information please contact Annette Jose on 6252 7474, or Email: annette.jose@abs.gov.au

Labour Force Seasonal Adjustment after Regional Benchmarking and Change to Future Starters

LABOUR FORCE SEASONAL ADJUSTMENT AFTER REGIONAL BENCHMARKING AND CHANGE TO FUTURE STARTERS

From February 2004, Labour Force Survey (LFS) original estimates have been compiled using the new benchmarks derived from the 2001 Census. This is referred to as a benchmark. The revised benchmarks now include population benchmarks by 68 regions covering Australia. At the same time, the Australian Bureau of Statistics (ABS) has introduced a change to the definition of unemployed persons. Future starters not actively looking for work (FS) are now reclassified from the 'not in the labour force' category to the 'unemployed' category in line with the United Nations definition. The category changes were implemented by recompiling LFS original estimates from April 2001 onwards.

Changes in LFS original estimates will impact on related seasonal adjusted and trend estimates. To assist in the 2004 annual seasonal reanalysis of LFS estimates, the Time Series Analysis Section (TSA) investigated LFS time series estimates to assess the impact of the category change of FS, and regional benchmarking.

Regional Benchmarking

A possible impact of applying regional benchmarking is increased revision of the historical original estimates and, consequently, the seasonally adjusted estimates of Australian and State Labour Force. Our investigation showed that regional benchmarking did not introduce significant trend and seasonal breaks in the 64 directly adjusted LFS series, covering the 27 month period from January 1999 onwards.

Future Starters

A significant level shift (about 0.3% on average and ranging up to almost 0.8%) was detected in each of the National level seasonally adjusted unemployment component series. In addition, seasonal pattern changes were also identified for most female unemployment series. The common feature is that January female unemployment is seasonally higher under the new category definition.

Not all State level unemployment component series have shown significant FS induced changes in their underlying level. For small states and territories (Tasmania, ACT and NT), it was found that the FS original estimates were not reliable because FS were represented by only a handful of persons within the relatively small LFS samples. This resulted in volatile original estimates of FS, making it difficult to reliably estimate trend and seasonal break corrections for these states and territories. The trend and seasonal break correction factors at national level by gender were applied across all States and Territories first for a seasonal adjustment quality assessment. The corrections were then implemented only after improvements in seasonal adjustment quality were confirmed for the state level series.

The resultant estimates of trend and seasonal break corrections for FS were applied to Australian and State

Unemployment component series prior to the 2004 annual seasonal reanalysis. The corrections adequately took account of the systematic (seasonal) and underlying (level shift) effects of the category change of FS.

For further information, please contact Mark Zhang on (02) 6252 5132, or Email: mark.zhang@abs.gov.au.

2004/5 Indigenous Health Survey Sample Design

2004/5 INDIGENOUS HEALTH SURVEY SAMPLE DESIGN

The 2004/05 Indigenous Health Survey (IHS) is the first in a new series of regular six-yearly Indigenous health surveys which are planned to coincide with every second triennial National Health Survey (NHS). The sample design for the IHS was finalised in late February 2004, and sample selections are currently being considered by Population Survey Operations' regional offices.

The sample design process has been considered an improvement on previous Indigenous household surveys, in particular the recent 2002 Indigenous Social Survey (ISS).

The ISS experience highlighted the many challenges associated with large scale Indigenous surveys with multiple competing objectives. A post enumeration workshop for the ISS was held in March 2003, to identify 'lessons learnt' and possible improvements for IHS development, particularly for sample design. One problem with the IHS was the large screening sample needed, due to the lower than expected identification rate of indigenous households. Initial discussions suggested that a major rethink of indigenous sample design was needed to solve this and other problems. Eventually, the workshop found that the sampling strategy itself was not the main problem, and that improvements to the fundamental inputs used to guide the sample design were needed.

The IHS sample design was largely a refinement of that adopted in ISS. The sample was split into two components; a 'remote' sample which is drawn from a selection of remote discrete Indigenous communities, and a 'non-remote' sample which is selected via a screening process from a selection of census collection districts. The focus for the IHS was on ensuring that the fundamental input parameters to the design were sufficiently formulated. Specific improvements included:

- updating of both the Indigenous community frame for the remote sample and a non-community frame for the screened sample;
- cost model development using detailed cost data captured from the ISS to facilitate decisions on cluster size and person per household choices and the sample allocation process;
- modelling of 'hit rates' from the ISS non-remote sample; and
- a flexible allocation mechanism that enabled a range of allocation scenarios to be assessed in a timely fashion.

The final sample is expected to be more efficient than the ISS, and the management of enumeration is expected to proceed more smoothly. Whilst there was only minimal reduction to the level of screening compared to the ISS, the use of external administrative data sources such as public housing lists and Indigenous health clinic data to facilitate the screening exercise remains a possibility.

For more information please contact Alistair Rogers on (02) 6252 7334, or Email: al.rogers@abs.gov.au

Analysing the Western Australia Aboriginal Child Health Survey

ANALYSING THE WESTERN AUSTRALIA ABORIGINAL CHILD HEALTH SURVEY

Analytical Services Branch have been working closely with the Institute of Child Health Research since June 2003, when we began a collaborative project to assist them with their analysis of data from the new Western Australian Aboriginal Child Health Survey (WAACHS).

The WAACHS is a large scale survey of the health and well being of 5,289 Western Australian Aboriginal and Torres Strait Islander children. The survey's primary objective is to identify the developmental and environmental factors that enable competency in Aboriginal children and young people. It is the first undertaking to gather comprehensive health, psychosocial and educational information on Aboriginal and Torres Strait Islander children in their families and communities.

Our initial work has focussed on assessing the internal consistency and reliability of a set of mental health questions collected on the survey. The Strengths and Difficulties Questionnaire (SDQ) is the principal method used in the

WAACHS to assess the mental health of Indigenous children. The SDQ was developed by Robert Goodman and contains twenty five questions and aims to capture various aspects of mental health (emotional symptoms, conduct problems, hyperactivity, peer problems and prosocial skills). For further detail on the question contents and scoring of the SDQ, see www.sdqinfo.com

While the SDQ has been well tested and is known to be valid for the general population, this is the first time it has been applied in an Indigenous context. A key aim of this work has been to test the validity of the SDQ measurement model in assessing mental health behaviours of Indigenous children. How reliably the 25 indicators measure mental health is assessed by running Structural Equation Models and assessing model fit using various diagnostic statistics. Overall, we concluded that the SDQ is quite reliable in measuring mental health in an Indigenous context.

Further analysis of Indigenous mental health outcomes has been done within the framework of multi-level modelling. Both two-level models (Indigenous children and carers) and three-level models (children, carers and census district) have been estimated. This allows us to determine the proportion of variation in mental health that is due to differences between carers (and later on locality). These models have been extended to explore variation in mental health explained by other characteristics such as age, gender, remoteness and physical health problems.

A second wave of analysis which builds on the work validating the SDQ and focuses on mental health and educational outcomes has just begun.

For more information, please contact John De Maio on 02 6252 6804, or Email: john.de.maio@abs.gov.au

Making Quality Visible using the Quality Infrastructure System

MAKING QUALITY VISIBLE USING THE QUALITY INFRASTRUCTURE SYSTEM

The Quality Infrastructure System is an integrated infrastructure that will allow the capture, storage and use of quality measures over the end to end business processes of both PSG and ESG. QIS is a key enabler of making the quality of statistical processes and products visible within and between collections and collection cycles.

Broadly, the aims of the QIS are that:

- the performance of statistical processing functions is readily understood;
- the quality of statistical outputs is readily understood;
- users can drill down to understand why performance, or quality, is what it is;
- the ABS can manage quality and processes more efficiently; and
- users (either internal or external) can prepare reports on performance and quality that Make Quality Visible.

The QIS project has a strong metadata focus. While quality measures are a class of metadata in themselves, they require their own definitional and operational metadata. The Methodology Division will act as the registration authority for standard quality measures. This will aid in consistency and comparability across collections. Users will, of course, be still able to define their own custom measures.

Current development of QIS has resulted in a repository for the storage of quality measures. The repository is built around a dimensional model similar to that used in the Input Data Warehouse. This model allows for a variety of different types and levels of quality measures to be stored for both economic and household collections.

Existing ABS systems are being modified to enable quality measures to be loaded by a single data service to the repository. This service has been proven by storing messages sent from a test of Business Process Mapping in the Economic Activity Survey. Towards the end of 2003/2004 other ABS systems, including EPICS, QAWS and ABSEst will be enabled to send messages to the data service. The goal is to provide a robust infrastructure for existing systems to efficiently and painlessly hook into.

The repository can be accessed by on-line analytical products, such as Oracle Discoverer or SAS. Development towards the end of 2003/2004 will see the development of services that will access end of cycle quality measures and automatically load them to the Collection Management System. Further development will result in making Quality Measures accessible and available across the end to end business process. This will include desktop access to quality measures of interest, regular customised reports and automatic generation of documentation for the survey clearance process.

For more information, please contact Tenniel Guiver 02 6252 7310, or Email: tenniel.guiver@abs.gov.au.

About this release

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